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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,572	12/31/2003	Ali Keshavarzi	P18062	5687

7590 08/10/2005

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EXAMINER	
NGUYEN, THINH T	
ART UNIT	**PAPER NUMBER**
2818	

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/750,572	KESHAVARZI ET AL.	
	Examiner	Art Unit	
	Thinh T. Nguyen	2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) *7-19* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED OFFICE ACTION

1. claims 1-19 are pending in the Application

2. Applicant's election **with traverse** of claims **1-6** in the communication with the Office on 7/21/2005 is acknowledged.

Because Applicant did not distinctly and specifically point out the supposed error in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Applicants have the right to file a divisional, continuation or continuation-in-part application covering the subject matter of the non-elected claims.

The traversal is on the ground(s) that see the election paper. This is not found persuasive for the following reasons:

A/ applicant argues that the Flash memory is not materially different from the applicant claimed device is not persuasive since the flash memory (sometimes known as EEPROM for Electrically Erasable Programmable Read Only Memory) can be electrically erased while applicant device is not. Noted that a flash memory is used as Read Only Device while applicant device is a read and write device.

B/ Moreover, the device of claim 1 can be used in non-programming method for example a pure hardware device such as a fast power buffer.

C/ furthermore, because the fields of search for method and device claims are NOT coextensive as evidenced by their difference classifications (see the previous Office Action) and the determinations of patentability of method and device claims are different, that is process

limitations and device limitations are given weight differently in determining the patentability of the claimed inventions. Also, the strategies for doing text searching of the device claims and method claims are different. Thus, separate searches are required.

The requirement is still deemed proper and is therefore made **FINAL** and therefore non-elected claims 7-19 are withdrawn from consideration in the present Office action.

Specification

3. The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant cooperation is requested in correcting any errors of which the applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(a/b/e) that form the basis for the rejections under this section made in this office action.

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent,

except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 1, 4,5 are rejected under 35 U.S.C. 102(e) as being anticipated by Burnett (U.S. Patent 6,861,689).

REGARDING CLAIM 1

Burnett discloses (in fig 13,column 1 lines 59-60) a memory cell comprising: a body region (region 106 in fig 13) doped with charge carriers of a first type; a source region (source region 120,122) disposed in the body region, the source region doped with charge carriers of a second type; and a drain region disposed in the body region, the drain region (drain region doped with charge carriers of the second type, wherein the body region and the source region form a first junction, wherein the body region and the drain region form a second junction, and wherein a conductivity of the first junction from the body region to the source region in a case that the first junction is unbiased is substantially less than a conductivity of the second junction from the body region to the drain region in a case that the second junction is unbiased. Noted even though Burnett does not mentioned the limitation " wherein the body region and the source region form a first junction, wherein the body region and the drain region form a second junction, and wherein a conductivity of the first junction from the body region to the source region in a case that the first junction is unbiased is substantially less than a conductivity of the second junction from the body region to the drain region in a case that the second junction is unbiased. "; the structure discloses by Burnett in fig 13 fully anticipate this limitation of claim 1 due to the doping profile of the source

(N+ and N- doped) compared with the drain (N+ doped) therefore the conductivity of the drain is more than the conductivity of the source when unbiased.

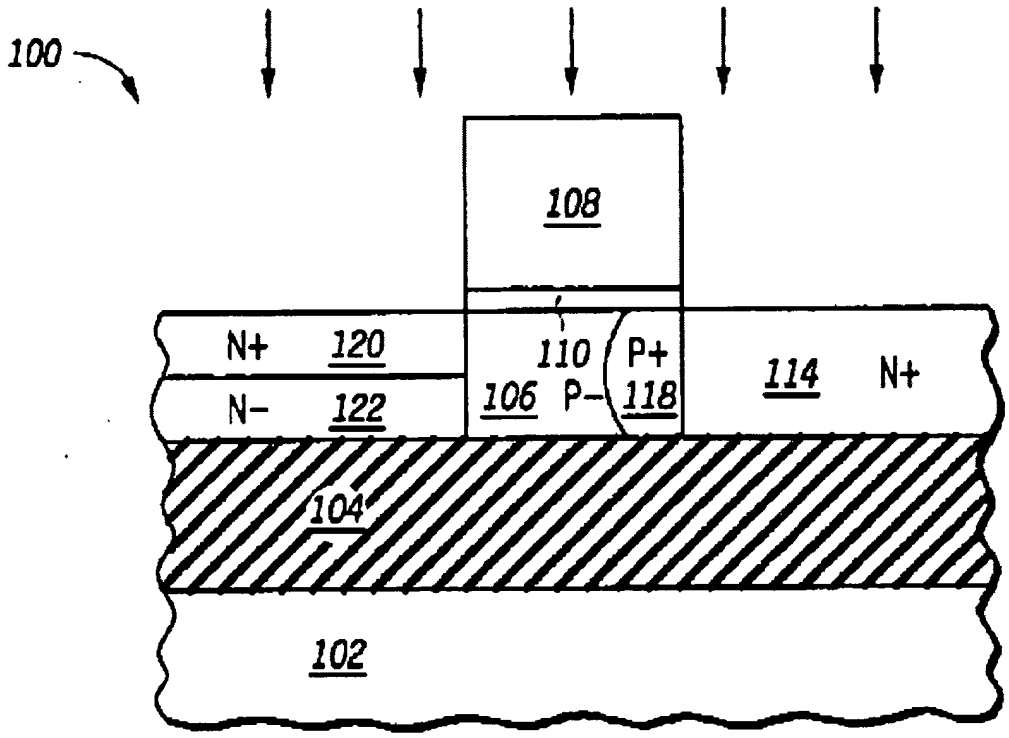

FIG. 13

REGARDING CLAIM 4,5

Burnett discloses (in fig 13,region 118) a halo implant region to form at least a portion of the second junction and the Halo implant is more heavily doped (P + doped) than the body region 106 (P- doped)

Claim Rejections - 35 USC § 103

6. The following is a quotation of U.S.C. 103(a) which form the basis for all obviousness rejections set forth in this office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burnett (U.S. patent 6861689) in view of Burr (U.S. patent 6,583,001).

REGARDING CLAIM 2

Burnett disclosed all the invention except for a doped substrate with the charge carrier of the first type, Burr, however, discloses floating body NFET transistor device with P doped substrate (fig 3A layer 306).

It would have been obvious to one of ordinary skill in the art to complement the teachings by Burnett with the teachings by Burr and come up with the invention of claim 2.

The rationale is as the following:

A person skilled in the art at the time the invention was made would have been motivated to improve the device invented by Burnett by lower its threshold voltage as suggested by Burr in column 1 lines 38-39.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burnett (U.S. patent 6861689) in view of Burr (U.S. patent 6,583,001) and in view of further remark.

REGARDING CLAIM 3

As discussed in the rejection of claim 2, the combined teachings by Burnett and Burr disclosed all the invention except for the relative doping between the substrate and the body region. This limitation, however, is considered obvious since it has been held that where all the general conditions of a claim are disclosed in the prior art; discovering the optimum value or workable range involves only routine skill in the art.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burnett (U.S. patent 6861689) in view of further remark.

REGARDING CLAIM 6

Burnett discloses all the invention except for the use of trench isolation. This feature is considered obvious since the use of trench isolation in semiconductor is old and well known in the art as evidenced by the disclosure by Chan (US Paten 6,566,176) in column 4 lines 3-5.

A person skilled in the art at the time the invention was made would know how to make trench isolation for the Burnett device without any special teachings.

10. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and the page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

11. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to be abandoned (see M.P.E.P. 710.02(b)).

CONCLUSION

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thinh T Nguyen whose telephone number is 571-272-1790. The examiner can normally be reached on Monday-Friday 9:00am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached at 571-272-1787.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval [PAIR] system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thinh T. Nguyen

Art Unit 2818